

Sammy Gelman

sammygelman@gmail.com | 050-278-4371

Linkedin: www.linkedin.com/in/sammygelman

Github: <https://github.com/SammyGelman>

Education

Tel Aviv University

M.Sc. Statistical Mechanics, School of Chemistry

Binghamton University

B.A., Honors in Chemistry 3.75/4.00 GPA

Ramat Aviv, Israel

Current

Binghamton, New York

Sept. 2012 - May. 2014

Programming Skill Set

Cohen Group, Tel Aviv University

Algorithm Development, Statistical Mechanics | 2016 - Present

- Working with deep neural networks written in python using **Tensorflow** and **Keras** libraries.
- Flexible using **Docker** containers to support **CUDA** images for optimized **GPU** performance while training **deep-learning** models.
- Workflow and runscripts interface within **bash**. Organized data **pipelines** and built hierarchical **database** infrastructures.
- Graphically represented data to informative and balanced publication-grade figures using **matplotlib**.
- Mastery of a wide range of technical vocabulary in physics, chemistry and **statistics** along with the requisite mathematical literacy.
- Experience working on machines running Unix's Ubuntu. Algorithmic code written in **Python**. Utilizing libraries such as: **numpy**, **pandas**, **arg/configparser** etc. Using a customized **Vim** environment, **IPython** and **Tmux** shells for workflow.
- Function oriented programming. Codebase written and backed up using best practice in **Git**.

Thesis and Prospective Publication

Exploring Non-Equilibrium Physics

Autoregressive Density Estimation | 2018 - Present

- Generated quality samples to train a modified version of the open source autoregressive network PixelCNN++.
- Optimized network training by algorithmically tuning hyperparameters, using Keras and custom runscripts.
- Developed a method for the estimation of entropy that is both more flexible and easily scalable than existing methods.
- Used this new tool to investigate otherwise unobserved physics in phase transitions of the Ising Model.

Courses and Studies

Tel Aviv University | 2018 - 2021:

- Differential Equations, Vector Analysis, Statistical Mechanics, Statistical Thermodynamics, Stochastic Processes, Computational Chemistry, Computational Process Control, Machine Learning (Stanford), Linear Algebra (MIT), Probability and Statistics (MIT).

Binghamton University | 2012 - 2014:

- Chemistry, Biology, Calculus I & II, Physics, Organic Chemistry, Analytical Chemistry, Biophysical Chemistry.

Military Service

Yechidat Matmon | 2016 - 2018:

Laboratory Technician: Chemistry and Materials Branch, IDF

- Tested material and chemical samples - operating equipment such as: TGA, DSC, Lumisizer, GC-MS and HPLC.

Skills

Native English Speaker | Python: pd, np, tf & keras | bash | Julia | Git | SQL | tmux | vim | Ability to Research | Fast Learner | Strong Writing | Teacher | Hebrew - Fluent | Innovative | Analytical Thinker | Verbal Communication | Problem Solver |